

## **WHAT IS CLAIMED IS:**

1. An adjustable pedal assembly comprising, in combination:

a carrier;

a lower arm supported by the carrier and operatively connected to the carrier for selected movement relative to the carrier;

a drive assembly operatively connected to the lower arm to selectively move the lower arm relative to the carrier, the drive assembly comprising a drive screw connected to one of the lower arm and the carrier, a drive nut connected to the other of the lower arm and the carrier and cooperating with the drive screw such that the drive nut travels along the drive screw upon rotation of the drive screw to move the lower arm, and an electric motor operatively connected to the drive screw to selectively rotate the drive screw;

a sensor to detect motion information indicating movement of the lower arm upon rotation of the drive screw; and

a controller connected to the motor to selectively activate and deactivate the motor and connected to the sensor to receive the motion information from the sensor, the controller having a processor programmed to selectively active the motor to move the lower arm, to receive the motion information, and to determine obstruction conditions of the lower arm based on the motion information during movement of the lower arm.

2. The adjustable pedal assembly according to claim 1, wherein the motion information includes velocity information and obstruction conditions are determined based on the velocity information.

3. The adjustable pedal assembly according to claim 2, wherein the processor is programmed to determine an obstruction condition by comparing a current speed value with a stored full speed value.

4. The adjustable pedal assembly according to claim 3, wherein the controller has memory and the processor is programmed to store a new full speed value in the memory during each movement of the lower arm.

5. The adjustable pedal assembly according to claim 3, wherein the processor is programmed to determine an obstruction condition by comparing the current speed value with a sum of the stored full speed value and a constant value.

6. The adjustable pedal assembly according to claim 5, wherein the constant value is a predetermined percentage of the stored full speed value.

7. The adjustable pedal assembly according to claim 1, wherein the motion information includes acceleration information and obstruction conditions are determined based on the acceleration information.

8. The adjustable pedal assembly according to claim 1, wherein the motion information includes motor current information and obstruction conditions are determined based on the motor current information.

9. The adjustable pedal assembly according to claim 1, wherein the motion information includes motor power information and stall conditions are determined based on the motor power information.

10. The adjustable pedal assembly according to claim 1, wherein the sensor is one of a hall-effect switch, a potentiometer, a linear hall-effect device, a linear potentiometer, and a current shunt.

11. The adjustable pedal assembly according to claim 1, wherein the sensor is a current sensor.

12. The adjustable pedal assembly according to claim 1, wherein the sensor is located adjacent the drive screw.

13. The adjustable pedal assembly according to claim 1, wherein the processor is programmed to stop movement of the lower arm when an obstruction condition is detected between limits of travel of the lower arm.

14. The adjustable pedal assembly according to claim 1, wherein the processor is programmed to reverse direction of movement of the lower arm when an obstruction condition is detected between limits of travel of the lower arm.

15. The adjustable pedal assembly according to claim 14, wherein the processor is programmed to reverse direction of movement of the lower arm for a predetermined distance when the obstruction condition is detected.

16. The adjustable pedal assembly according to claim 14, wherein the processor is programmed to reverse direction of movement of the lower arm for a predetermined period of time when the obstruction condition is detected.

17. The adjustable pedal assembly according to claim 14, wherein the processor is programmed to stop movement of the lower arm when another obstruction condition is detected after reversing direction of movement of the lower arm upon detecting the obstruction condition.

18. The adjustable pedal assembly according to claim 14, wherein the processor is programmed to again reverse direction of movement of the lower arm for a predetermined distance when another obstruction condition is detected after reversing direction of movement of the lower arm upon detecting the obstruction condition.

19. The adjustable pedal assembly according to claim 14, wherein the processor is programmed to again reverse direction of movement of the lower arm for a predetermined period of time when another obstruction condition is detected after reversing direction of movement of the lower arm upon detecting the obstruction condition.

20. The adjustable pedal assembly according to claim 1, wherein the processor is programmed to determine stall conditions of the lower arm in both forward and rearward directions.